FLEXIBLE MANAGEMENT TOOLS FOR DELL REMOTE CONSOLE SWITCHES

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The latest firmware updates for Dell™ 2161DS-2 and 4161DS remote console switches enhance remote server management through an on-board Web browser–based interface, virtual media features, and support for Avocent® KVM (keyboard, video, mouse) over IP technology and Avocent DSView® 3 management software.

Availability and security are cornerstones of data center operations and maintenance. Network administrators continue to require access to and real-time control over their servers and other IT assets while maintaining a largely automated environment. The latest firmware updates for Dell 2161DS-2 and 4161DS remote console switches help meet these remote management needs through Avocent KVM (keyboard, video, mouse) over IP technology in conjunction with Avocent DSView 3 management software.

Related Categories:

Keyboard, video, mouse (KVM)

Remote management

Storage management

Virtual media

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Understanding KVM over IP technology

KVM over IP digitizes keyboard, video, and mouse data and can then send it over TCP/IP connections. It can connect directly to a server using existing network infrastructure, does not require adding software or hardware to computers, and supports both local and remote users. It is designed to work in heterogeneous hardware environments and is well suited for managing multilocation data centers and branch offices.

Utilizing Dell 2161DS-2 or 4161 remote console switches with Avocent KVM over IP technology requires two components: the switch and a server interface pod (SIP). The hardware consists of a rack-mountable KVM switch that integrates the traditional functionality of analog KVM switches with the digital technology of KVM over IP. The switches can use 1U of rack space or be mounted in the 0U area of a Dell rack. Each switch can manage up to 128 servers, or connect to Dell analog KVM switches to manage up to 256 servers. By combining analog and digital technology, these switches can provide flexible, centralized server control while helping significantly reduce cable volume and enabling secure remote access.

The local port provides the analog connection for server access. This connection accommodates access for either a data center crash cart or a rack-mounted KVM solution. A 10/100/1,000 Mbps Ethernet interface provides the digital remote connection for server access, digitizing the server image and then transporting it through a TCP/IP connection across a corporate intranet or over the Internet to a remote user.

For more information about the advantages of KVM technology, see the "Key advantages of KVM technology" sidebar in this article.

Integrating Dell KVM console switches with Avocent DSView3 software

The latest firmware updates for Dell 2161DS-2 and 4161DS remote console switches are designed to broaden and deepen the reach of KVM over IP infrastructure control for network administrators. The enhancements include the following:

- An on-board Web browser–based interface that allows direct access to the switch
- A virtual media implementation within the switch that enables out-of-band file transfers as well as application and OS patch deployment
- Integration with Avocent DSView 3 software, which allows administrators to control switch power and manage other devices from a single console

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Figure 1 shows the basic elements of a data center environment incorporating Dell remote console switches, Cyclades® ACS advanced console servers from Avocent, Cyclades PM intelligent power distribution units (IPDUs) from Avocent, and an Avocent MergePoint™ 5200 service processor (SP) manager. In addition, this figure shows the three tools through which administrators can access such an environment: Dell Remote Console Software (RCS), the remote console switch Web browser–based interface, and Avocent DSView 3.

Using Dell remote console switches in conjunction with Avocent KVM over IP technology and Avocent DSView 3 software can offer multiple advantages, including simplified control over multiple systems, easy integration into existing infrastructures, comprehensive management capabilities, increased efficiency and security, and enhanced availability.

Simplified control over multiple systems

Dell remote console switches support several methods of remotely managing, viewing, and controlling attached servers:

- The on-board Web browser–based interface, which provides a secure connection to individual switches using a standard Web browser
- Dell RCS, which runs on a Java platform and enables administrators to manage multiple switches at once
- Avocent DSView 3 management software, which offers comprehensive data center control and enhanced security

Each of these options provides access to the system during reboot, even at the BIOS level, without requiring software installation on the target browser. To transmit KVM signals, Dell RCS uses industry-standard TCP/IP connections and confirms 128-bit Secure Sockets Layer (SSL) encryption. Administrators can also select Data Encryption Standard (DES) or Triple DES (3DES) encryption.

Easy integration into existing infrastructures

SIPs connect to the KVM port of target servers and send analog signals over a Category 5 (Cat 5)

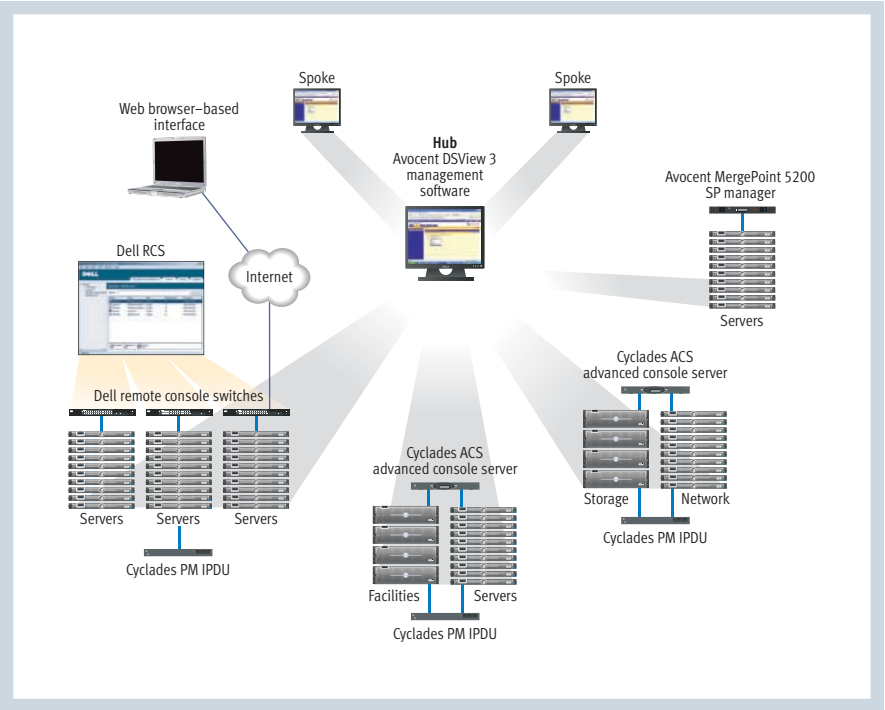

Figure 1. *Example environment incorporating Dell remote console switches, Avocent KVM over IP technology, and Avocent DSView 3 software*

KEY ADVANTAGES OF KVM TECHNOLOGY

KVM infrastructures can provide multiple advantages in enterprise environments, including the following:

- **Centralized management:** Switches utilizing KVM over IP technology provide access to servers and devices from a central location that administrators can easily access remotely.
- **Out-of-band server access:** Because they provide a direct connection to keyboard, video, and mouse ports, KVM switches enable BIOS-level access independent of servers or networks—meaning administrators can still manage servers even if the network fails.
- **Increased efficiency and reduced costs:** By providing centralized access to IT infrastructures, KVM technology enables administrators to centralize expertise, increase response times, and reduce the cost and time of physically going to the server room.
- **Increased data center security:** KVM technology enables administrators to maintain servers in a secure environment while still enabling full access to those servers. It also provides additional security such as password control and detailed logging of user access to servers.
- **Increased responsiveness and reduced downtime:** With KVM technology, administrators can respond immediately to problems from any location. Expert centralized staff can immediately diagnose and repair problems in remote data centers and branch offices.
- **Reduced power and space requirements:** By rendering multiple sets of redundant peripherals unnecessary, KVM technology helps enterprises reduce power and space requirements.

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"By combining analog and digital technology, Dell 2161DS-2 and 4161DS switches can provide flexible, centralized server control while helping significantly reduce cable volume and enabling secure remote access."

unshielded twisted-pair (UTP) cable back to the switch. Designed to reduce cable volume, SIPs can help save rack space and allow administrators to position servers more than 50 feet from the switch.

Comprehensive management capabilities

In the past, switch administrators have had access to and control over servers. When servers failed or when hub, router, or headless server problems arose, however, they could not rely on their KVM switch infrastructure to resolve them.

The latest firmware updates for Dell remote console switches add support for Avocent DSView 3 software, providing enhanced management capabilities and allowing administrators to manage additional devices from their KVM management console. Specifically, administrators can now implement Avocent MergePoint SP managers to utilize the Intelligent Platform Management Interface (IPMI) software in eighth- and ninth-generation Dell PowerEdge™ servers. They can also implement serial console switches to manage hubs, routers, and headless servers as well as IPDUs. Incorporating this hardware into their Dell KVM over IP infrastructure can provide administrators with comprehensive out-of-band access and control over heterogeneous data center environments.

Increased efficiency and security

Physically getting up and going to the server room to install a patch or run diagnostics costs administrators valuable time, and the increased foot traffic through the data center can also increase exposure to potential security risks. The virtual media capability added in the latest firmware updates to Dell remote console switches is designed to address these problems. By enabling administrators to map CDs and other storage media to a remote server to perform file transfers, application and OS patches, and diagnostics, virtual media helps increase efficiency without compromising physical security.

Enhanced availability

Failed servers can cause major difficulties when administrators are working remotely or in environments with tightly controlled physical access. Dell remote console switches and Avocent KVM technology provide administrators with multiple ways to resolve server problems in these types of environments.

If the failed server is an eighth- or ninth-generation Dell PowerEdge server with IPMI 2.0 enabled, administrators can remotely view the system event log to help identify the problem. They can then use the Avocent MergePoint SP manager to power down or power cycle the server if necessary. If the server does not support IPMI, administrators can use Avocent DSView 3 to access the IPDU infrastructure and power cycle the server.

If a problem occurs with a server that uses a serial console as its management port, administrators can access the serial console switch through DSView 3 to help identify the problem. They can then use either the command-line interface to reboot the device or the IPDU infrastructure to power cycle the server, and view the server reboot using the KVM over IP connection.

Simplifying management in KVM infrastructures

Dell 2161DS-2 and 4161DS remote console switches coupled with Avocent KVM over IP technology and Avocent DSView 3 software can provide a single console for cost-effective out-of-band access, management, and power control—helping reduce mean time to repair while maintaining the security of the physical environment. Implementing these elements in data centers utilizing eighth- and ninth-generation Dell PowerEdge servers enables administrators to enhance their out-of-band management capabilities, increase efficiency, and simplify data center management.

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